

"FEE ADDRESS" INDICATION FORM

To: MAIL STOP: M Fee Correspondence
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Please recognize as the "Fee Address," under the provisions of 37 CFR 1.363, the following address:


COMPUTER PATENT ANNUITIES, INC.
225 Reinekers Lane
Suite 400
Alexandria, VA 22314

Payor Number: 000197

in the following listed application(s) or patent(s) for which the issue fee has been paid.

<u>Patent No.</u>	<u>Serial No.</u>	<u>Patent Date</u>	<u>US Filing Date</u>	<u>Confirmation No.</u>	<u>Attorney Docket No.</u>
7,633,471B2	09/852,220	12/15/2009	05/09/2001	4950	SEL 259

Respectfully Submitted,



Mark J. Murphy
Registration No. 34,225
Date: January 6, 2010

COOK ALEX LTD.
200 West Adams Street
Suite 2850
Chicago, Illinois 60606
(312) 236-8500

Customer No: 26568



US007633471B2

(12) **United States Patent**
Yamazaki et al.

(10) **Patent No.:** **US 7,633,471 B2**
(45) **Date of Patent:** **Dec. 15, 2009**

(54) **LIGHT-EMITTING DEVICE AND ELECTRIC APPLIANCE**

(75) Inventors: **Shunpei Yamazaki**, Tokyo (JP); **Jun Koyama**, Kanagawa (JP); **Toru Takayama**, Kanagawa (JP)

(73) Assignee: **Semiconductor Energy Laboratory Co., Ltd.** (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 463 days.

(21) Appl. No.: **09/852,220**

(22) Filed: **May 9, 2001**

(65) **Prior Publication Data**

US 2002/0044111 A1 Apr. 18, 2002

(30) **Foreign Application Priority Data**

May 12, 2000 (JP) 2000-140043

(51) **Int. Cl.**
G09G 3/32 (2006.01)

(52) **U.S. Cl.** **345/83**

(58) **Field of Classification Search** 345/83,
345/84, 92, 98, 100, 204, 76, 80, 82, 211;
438/488, 149, 159, 146, 147, 213; 257/57,
257/72, 350, 59; 315/169.3, 169.2; 349/143;
445/24, 25

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,644,338 A * 2/1987 Aoki et al. 345/92
5,323,042 A 6/1994 Matsumoto
5,574,475 A 11/1996 Callahan, Jr. et al.

5,576,858 A 11/1996 Ukai et al. 359/59
5,604,358 A 2/1997 Kim
5,643,826 A 7/1997 Ohtani et al. 437/88
5,663,589 A * 9/1997 Saitoh et al. 257/401
5,670,792 A 9/1997 Utsugi

(Continued)

FOREIGN PATENT DOCUMENTS

EP 0895219 2/1999

(Continued)

OTHER PUBLICATIONS

U.S. Appl. No. 09/448,463 (pending) to Koyama et al, filed Nov. 24, 1999, including specification, claims, drawings and PTO filing receipt.

(Continued)

Primary Examiner—Richard Hjerpe

Assistant Examiner—Abbas Abdulsalam

(74) *Attorney, Agent, or Firm*—Cook Alex Ltd.

(57) **ABSTRACT**

An inexpensive light emitting device capable of displaying a bright image and an electric appliance using the light emitting device. In the light emitting device having a pixel portion and a driver circuit formed on one insulating member, all of semiconductor elements for the pixel portion and the driver circuit are formed by n-channel semiconductor elements, thereby enabling the manufacturing process to be simplified. Each of light-emitting elements provided in the pixel portion emits light in such a direction that most of the light travels away from the insulating member, so that substantially the whole of the pixel-forming segment electrode (corresponding to a cathode of an EL element) is formed as an effective light-emitting area. Therefore, a low-priced light-emitting device capable of displaying a bright image can be obtained.

30 Claims, 16 Drawing Sheets

